

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claims 1-123 (Canceled)

Claim 124 (Original) A method of synthesizing a bispecific antibody comprising the steps of:

- (i) expressing a gene having a sequence selected from the group consisting of: VH antibody 1-S-VL antibody 1-S-VL antibody 2-S-VH antibody 2; VH antibody 1-S-VL antibody 1-S-VH antibody 2-S-VL antibody 2; VL antibody 1-S-VH antibody 1-S-VL antibody 2-S-VH antibody 2; VL antibody 1-S-VH antibody 1-S-VH antibody 2-S-VL antibody 2; wherein -S- is a linker sequence; and
- (ii) isolating said bispecific antibody.

Claim 125 (Original) A method as in claim 124 wherein antibody 1 is an antibody capable of binding to an epitope of a specific cell, and antibody 2 is a catalytic antibody.

Claim 126 (Original) A method of synthesizing a bispecific antibody comprising the steps of:

- (i) expressing a gene having the sequence: VL antibody 1-S-VH antibody 2, and
- (ii) expressing a gene having the sequence: VH antibody 1-S-VL antibody 2,
- (iii) combining the products of steps (i) and (ii), and

(iv) isolating said bispecific antibody, wherein -S- is a linker sequence.

Claim 127 (Withdrawn) A method of synthesizing a bispecific antibody comprising the steps of:

- (i) expressing a gene having the sequence; VL antibody 2-S-VH antibody 1, and
- (ii) expressing a gene having the sequence: VH antibody 2-S-VL antibody 1,
- (iii) combining the products of steps (i) and (ii), and
- (iv) isolating said bispecific antibody, wherein -S- is a linker sequence.

Claims 128-132 (Cancelled)

Claim 133 (Previously Presented) A method as in claim 124, wherein antibodies 1 and 2 recognize two different cell types.

Claim 134 (Previously Presented) A method as in claim 126, wherein antibody 1 is an antibody capable of binding to an epitope of a specific cell, and antibody 2 is a catalytic antibody.

Claim 135 (Previously Presented) A method as in claim 126, wherein antibodies 1 and 2 recognize two different cell types.

Claim 136 (Withdrawn) A method as in claim 127, wherein antibody 1 is an antibody capable of binding to an epitope of a specific cell, and antibody 2 is a catalytic antibody.

Claim 137 (Withdrawn) A method as in claim 127, wherein antibodies 1 and 2 recognize two different cell types.

Claim 138 (Withdrawn) A method of synthesizing a bispecific antibody comprising the steps of:

- (i) expressing a single chain protein comprising the VH and VL regions of a first antibody (antibody 1) and the VH and VL regions of a second antibody (antibody 2) and
- (ii) isolating said bispecific antibody.

Claim 139 (Withdrawn) A method as in claim 1.38, wherein antibody 1 is an antibody capable of binding to an epitope of a specific cell, and antibody 2 is a catalytic antibody.

Claim 140 (Withdrawn) A method as in claim 138, wherein antibodies 1 and 2 recognize two different cell types.

Claim 141 (Withdrawn) A method of synthesizing a bispecific antibody comprising the steps of:

- (i) expressing a single chain protein comprising the VH region of a first antibody (antibody 1) and the VL region of a second antibody (antibody 2);
- (ii) expressing a single chain protein comprising the VL region of antibody 1 and the VH region of antibody 2;
- (iii) combining the products of steps (i) and (ii); and
- (iv) isolating said bispecific antibody.

Claim 142 (Withdrawn) A method as in claim 141, wherein antibody 1 is an antibody capable of binding to an epitope of a specific cell, and antibody 2 is a catalytic antibody.

Claim 143 (Withdrawn) A method as in claim 141, wherein antibodies 1 and 2 recognize two different cell types.

Claim 144 (Previously Presented) A method of synthesizing a recombinant antibody comprising the steps of:

- (i) expressing two single chain polypeptides, each of said single chain polypeptides comprising an antibody VH region and an antibody VL region;
- (ii) combining said two single chain polypeptides so that they associate; and
- (iii) isolating said recombinant antibody.

Claim 145 (Previously Presented) A method as in claim 144, wherein said recombinant antibody is bispecific.

Claim 146 (Currently Amended) ~~A~~The recombinant bispecific antibody of claim 176, wherein said polypeptide further comprising comprises a second a polypeptide chain that comprises the VH and VL regions, said second VL region sequence taken from a said first antibody (antibody 1) and the a second VH and VL regions of a said second VH region sequence taken from said second antibody (antibody 2).

Claim 147 (Currently Amended) ~~A~~The recombinant bispecific antibody as in claim 146, wherein said polypeptide chain has a sequence selected from the group consisting of VH antibody 1-S-VL antibody 1-S-VL antibody 2-S-VH antibody 2; VH antibody 1-S-VL antibody 1-S-VH antibody 2-S-VL antibody 2; VL antibody 1-S-VH antibody 1-S-VL antibody 2-S-VH antibody 2; and VL antibody 1-S-VH antibody 1-S-VH antibody 2-S-VL antibody 2; and wherein -S- is a linker sequence.

Claim 148 (Currently Amended) A ~~The~~ recombinant ~~bispecific~~-antibody as in claim 147, wherein antibody 1 is an antibody capable of binding to an epitope of a specific cell, and antibody 2 is a catalytic antibody.

Claim 149 (Currently Amended) A ~~The~~ recombinant ~~bispecific~~-antibody as in claim 147, wherein antibody 2 is an antibody capable of binding to an epitope of a specific cell, and antibody 1 is a catalytic antibody.

Claim 150 (Currently Amended) A ~~The~~ recombinant ~~bispecific~~-antibody as in claim 147, wherein antibodies 1 and 2 recognize two different cell types.

Claim 151 (Currently Amended) A vector containing a nucleic acid that encodes for a ~~bispecific~~ said recombinant antibody of as in claim 147.

Claim 152 (Currently Amended) A host cell that produces a ~~bispecific~~ said recombinant antibody of as in claim 147.

Claim 153 (Currently Amended) A bacteriophage containing a nucleic acid that encodes for a ~~bispecific~~ said recombinant antibody of as in claim 147.

Claim 154 (Currently Amended) A ~~The~~ recombinant ~~bispecific~~-antibody as in claim 146, wherein antibody is an antibody capable of binding to an epitope of a specific cell, and antibody 2 is a catalytic antibody.

Claim 155 (Currently Amended) A ~~The~~ recombinant ~~bispecific~~-antibody as in claim 146, wherein antibody 2 is an antibody capable of binding to an epitope of a specific cell, and antibody 1 is a catalytic antibody.

Claim 156 (Currently Amended) A ~~The~~ recombinant ~~bispecific~~-antibody as in claim 146, wherein antibodies 1 and 2 recognize two different cell types.

Claim 157 (Currently Amended) A vector containing a nucleic acid that encodes ~~for a bispecific~~ said recombinant antibody of ~~as in~~ claim 146.

Claim 158 (Currently Amended) A host cell that produces ~~a bispecific~~ said recombinant antibody of ~~as in~~ claim 146.

Claim 159 (Currently Amended) A bacteriophage containing a nucleic acid that encodes ~~for a bispecific~~ said recombinant antibody of ~~as in~~ claim 146.

Claim 160 (Currently Amended) ~~A~~The recombinant bispecific antibody ~~The~~ polypeptide of claim 176, further comprising

- (i) ~~— a first polypeptide comprising the VH region of a first antibody (antibody 1) and the VL region of a second antibody (antibody 2); and~~
- (ii) a second polypeptide comprising the VL region of antibody 1 and the VH region of antibody 2.

Claim 161 (Currently Amended) ~~A~~The recombinant bispecific antibody ~~The~~ polypeptide ~~as in~~ of claim 160, wherein said first polypeptide comprises the sequence VL antibody 1-S-VH antibody 2, said second polypeptide comprises the sequence VH antibody 1-S-VL antibody 2, and -S- is a linker sequence.

Claim 162 (Currently Amended) ~~A~~The recombinant bispecific antibody ~~The~~ polypeptide ~~as in~~ of claim 161, wherein antibody 1 is an antibody capable of binding to an epitope of a specific cell, and antibody 2 is a catalytic antibody.

Claim 163 (Currently Amended) ~~A~~The recombinant bispecific antibody ~~The~~ polypeptide ~~as in~~ of claim 161, wherein antibody 2 is an antibody capable of binding to an epitope of a specific cell, and antibody 1 is a catalytic antibody.

Claim 164 (Currently Amended) ~~A~~The recombinant bispecific antibody ~~The polypeptide as in of~~ claim 161, wherein antibodies 1 and 2 recognize two different cell types.

Claim 165 (Currently Amended) A vector containing a nucleic acid that encodes for a ~~bispecific~~recombinant antibody as in claim 161.

Claim 166 (Currently Amended) A host cell that produces a ~~bispecific~~recombinant antibody as in claim 161.

Claim 167 (Currently Amended) A bacteriophage containing a nucleic acid that encodes for a ~~bispecific~~recombinant antibody as in claim 161.

Claim 168 (Currently Amended) ~~A~~The recombinant bispecific antibody ~~The polypeptide as in of~~ claim 160, wherein antibody 1 is an antibody capable of binding to an epitope of a specific cell, and antibody 2 is a catalytic antibody.

Claim 169 (Currently Amended) ~~A~~The recombinant bispecific antibody ~~The polypeptide as in of~~ claim 160, wherein antibody 2 is an antibody capable of binding to an epitope of a specific cell, and antibody 1 is a catalytic antibody.

Claim 170 (Currently Amended) ~~A~~The recombinant bispecific antibody ~~The polypeptide as in of~~ claim 160, wherein antibodies 1 and 2 recognize two different cell types.

Claim 171 (Currently Amended) A vector containing a nucleic acid that encodes for a ~~bispecific~~recombinant antibody as in claim 160.

Claim 172 (Currently Amended) A host cell that produces a ~~bispecific~~recombinant antibody as in claim 160.

Claim 173 (Currently Amended) A bacteriophage containing a nucleic acid that encodes for a ~~bispecific~~recombinant antibody as in claim 160.

Claim 174 (Currently Amended) The A recombinant antibody of claim 176 further comprising two a second single chain polypeptides, ~~each of said second~~ single chain polypeptide comprising an antibody VH region and an antibody VL region.

Claim 175 (Previously Presented) The recombinant antibody of claim 174, wherein said recombinant antibody is bispecific.

Claim 176 (Currently Amended) ~~A polypeptide~~ A recombinant antibody comprising a polypeptide comprising one antibody VH region, said VH region sequence taken from a first antibody (antibody 1) and one antibody VL region, said VL region sequence taken from a second antibody (antibody 2).

Claim 177 (Currently Amended) ~~A polypeptide~~ The recombinant antibody as in claim 176, wherein said polypeptide has a sequence selected from the group consisting of VL antibody 2-S-VH antibody 1 and VH antibody 1-S-VL antibody 2, and -S- is a linker sequence.

Claim 178 (Previously Presented) A gene that encodes a polypeptide chain that comprises the VH and VL regions of a first antibody (antibody 1) and the VH and VL regions of a second antibody (antibody 2).

Claim 179 (Previously Presented) A gene as in claim 178, wherein said polypeptide chain has a sequence selected from the group consisting of VH antibody 1-S-VL antibody 1-S-VL antibody 2-S-VH antibody 2; VH antibody 1-S-VL antibody 1-S-VH antibody 2-S-VL antibody 2; VL antibody 1-S-VH antibody 1-S-VL antibody 2-S-VH antibody 2; and VL antibody 1-S-VH antibody 1-S-VH antibody 2-S-VL antibody 2; and wherein -S- is a linker sequence.

Claim 180 (Previously Presented) A gene that encodes a polypeptide chain that comprises one antibody VH region, said VH region sequence taken from a first antibody (antibody 1) and one VL region, said VL region sequence taken from a second antibody (antibody 2).

Claim 181 (Previously Presented) A gene as in claim 180, wherein said polypeptide comprises a sequence selected from the group consisting of VL antibody 2-S-VH antibody 1 and VH antibody 1-S-VL antibody 2, and -S- is a linker sequence.